

CLAIMS

1. A layered structure comprising
 - a first intermediate layer, said first intermediate layer comprising at least one element of group IVB, group VB or group VIB;
 - a second intermediate layer deposited on top of said first intermediate layer, said second intermediate layer comprising a diamond-like nanocomposite composition;
 - a diamond-like carbon layer deposited on top of said second intermediate layer.
2. A layered structure according to claim 1, whereby said first intermediate layer comprises titanium and/or chromium.
3. A layered structure according to claim 1 or 2, whereby said structure further comprises at least a layer comprising a diamond-like nanocomposite composition on top of said diamond-like carbon layer.
4. A layered structure according to any one of the preceding claims, whereby said first intermediate layer has a thickness between 0.001 and 1 μm .
5. A layered structure according to any one of the preceding claims, whereby said second intermediate layer has a thickness of 0.01 to 5 μm .
6. A layered structure according to any one of the preceding claims, whereby said diamond-like carbon layer has a thickness between 0.1 and 10 μm .
7. A layered structure according to any one of the preceding claims, whereby said nanocomposite composition comprises in

proportion to the sum of C, Si, and O in at% 40 to 90 % C, 5 to 40 % Si, and 5 to 25 % O.

8. A layered structure according to any one of the preceding claims,
5 whereby said second intermediate layer comprises a metal doped diamond-like nanocomposite composition.
9. A layered structure according to any one of the preceding claims,
10 whereby said diamond-like carbon layer is doped with a metal.
10. A substrate covered at least partially with a layered structure according to any one of claims 1 to 9.
11. The use of a substrate according to claim 10 for high shear
15 and/or high impact applications.
12. A method to cover a substrate with a layered structure according to any one of claims 1 to 10, whereby said method comprises the steps of
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 - providing a substrate;
 - applying a first intermediate layer, said first intermediate layer comprising at least one element of group IVB, group VB or group VIB;
 - applying a second intermediate layer, said second intermediate
25 layer comprising a diamond-like nanocomposite composition;
 - applying a diamond-like carbon layer.